

1/12

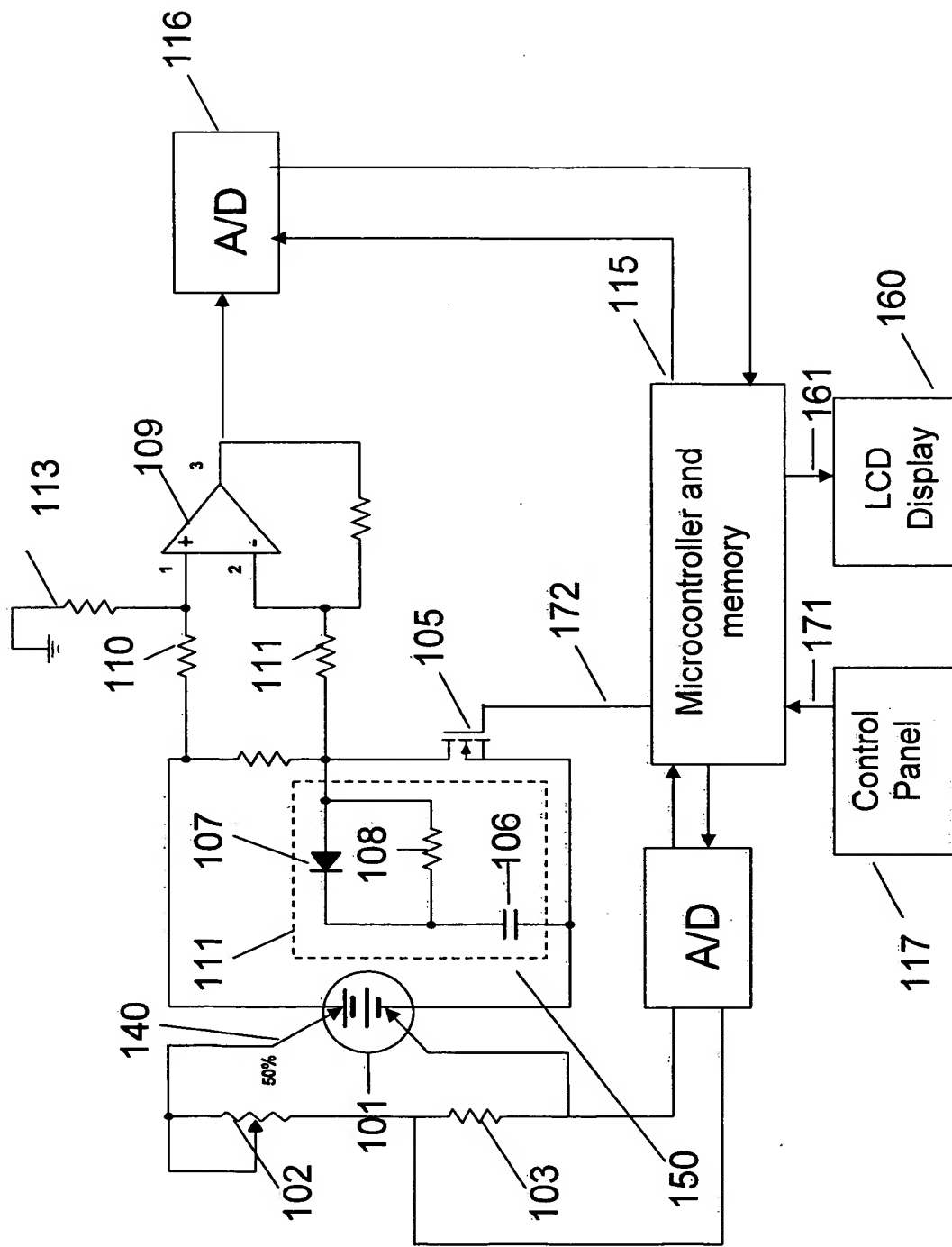


Fig.1

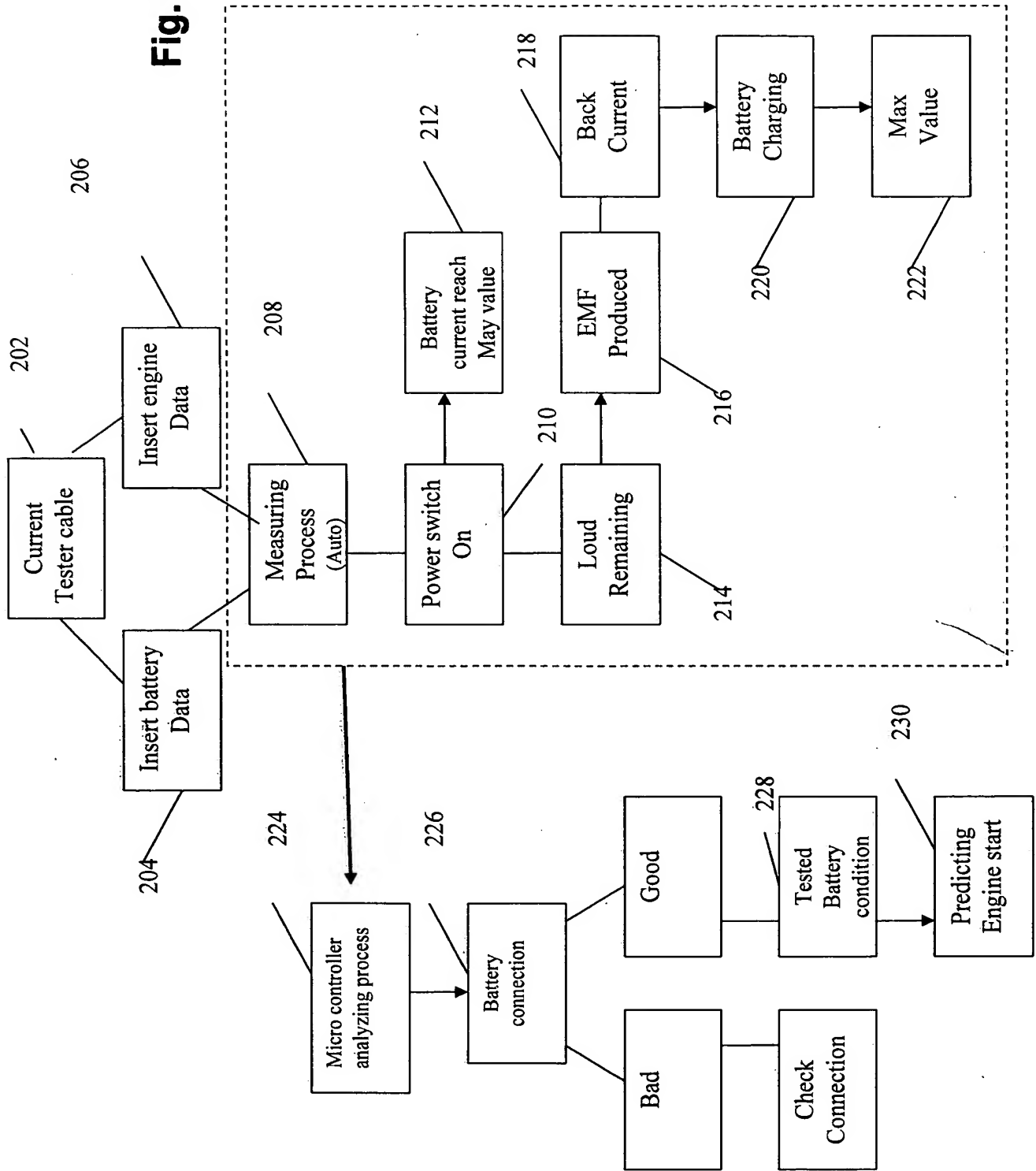
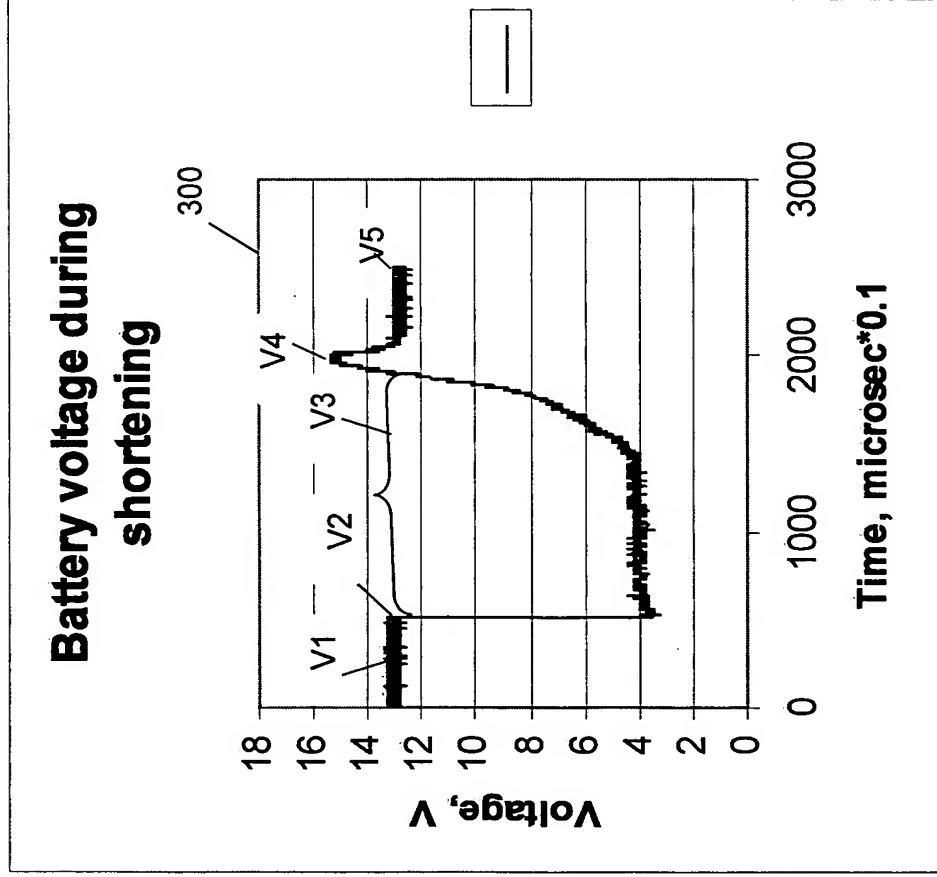


Fig. 2



**Fig. 3**

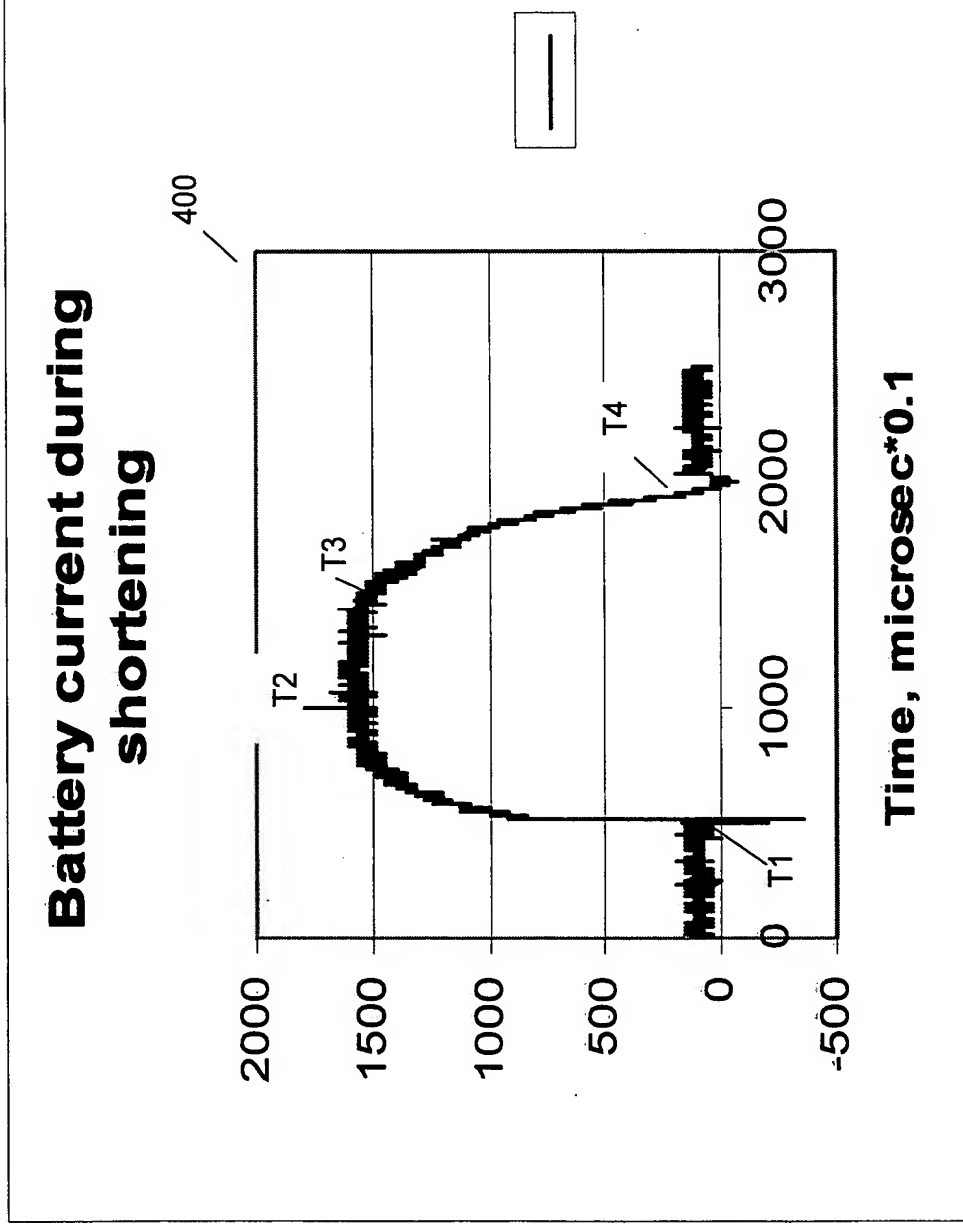


Fig. 4

## Battery voltage as a function of battery current (stright loading and remain loading)

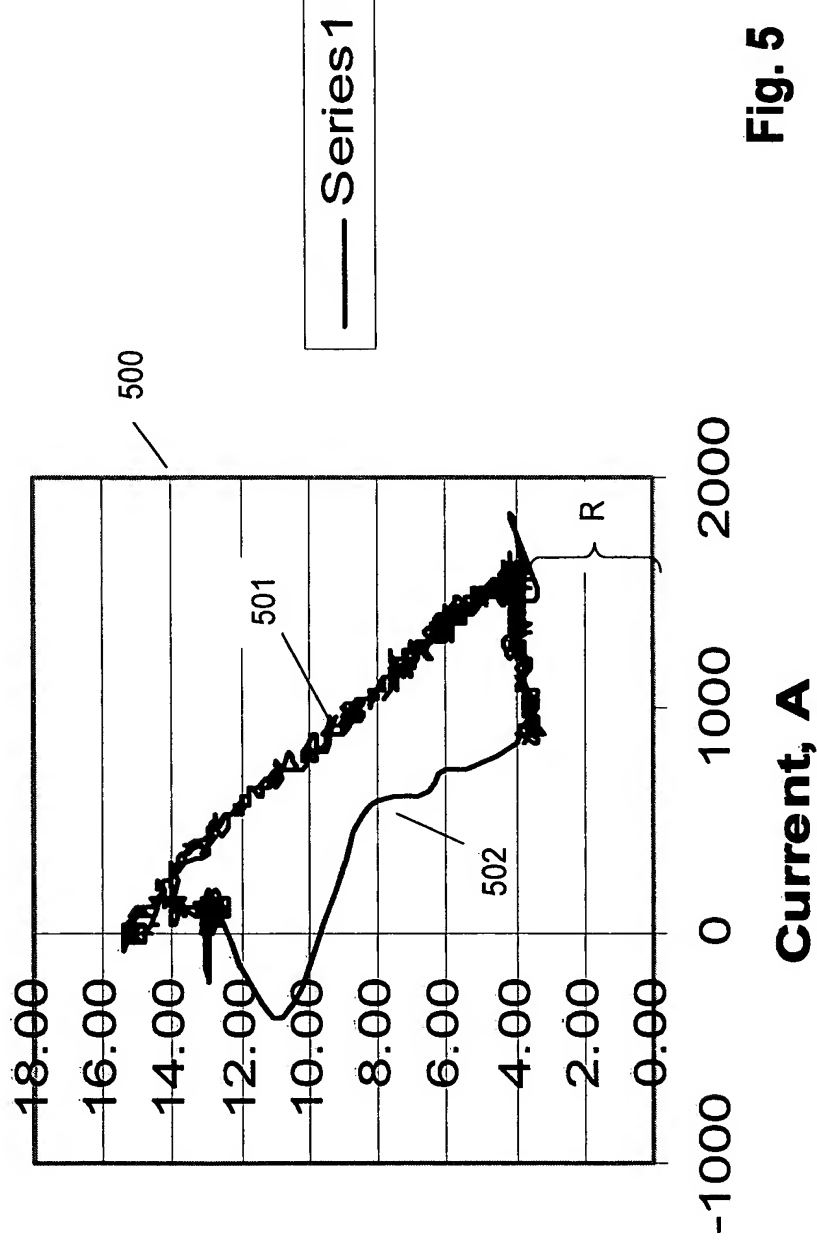
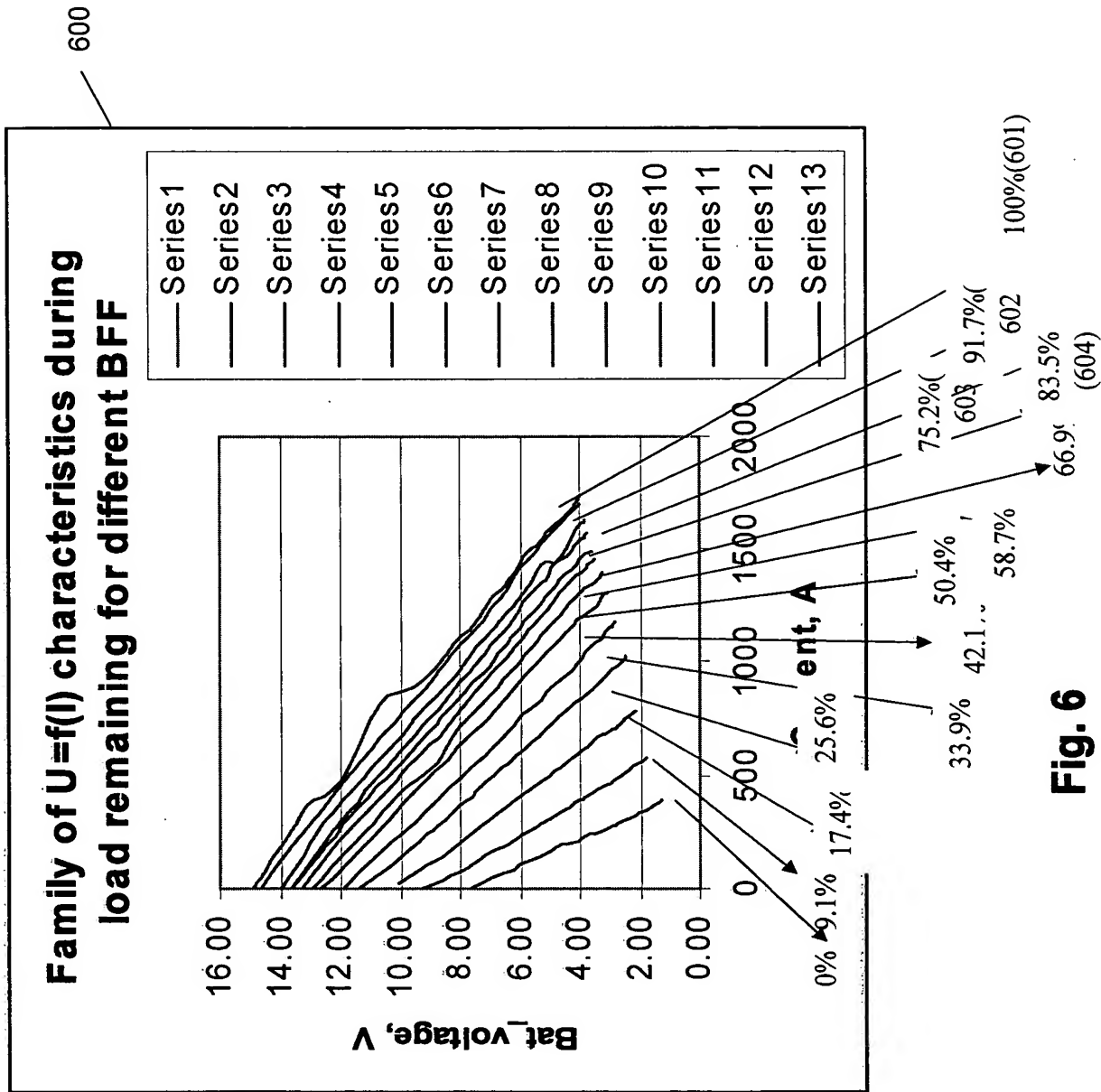


Fig. 5



**Fig. 6**

# Success Start FT2\_17 Degree

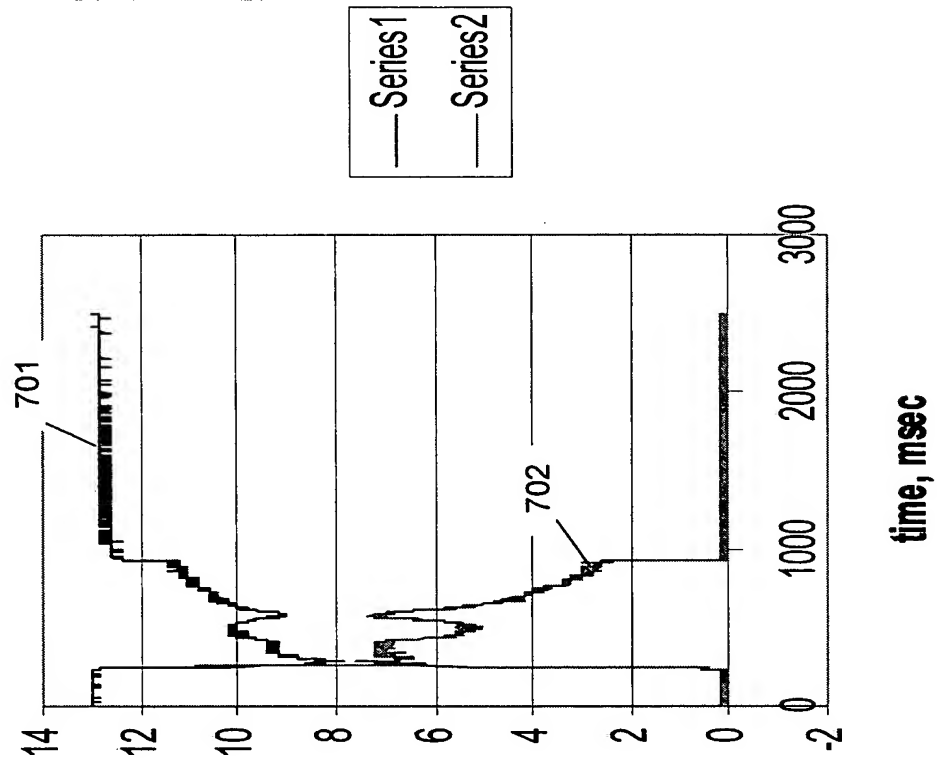
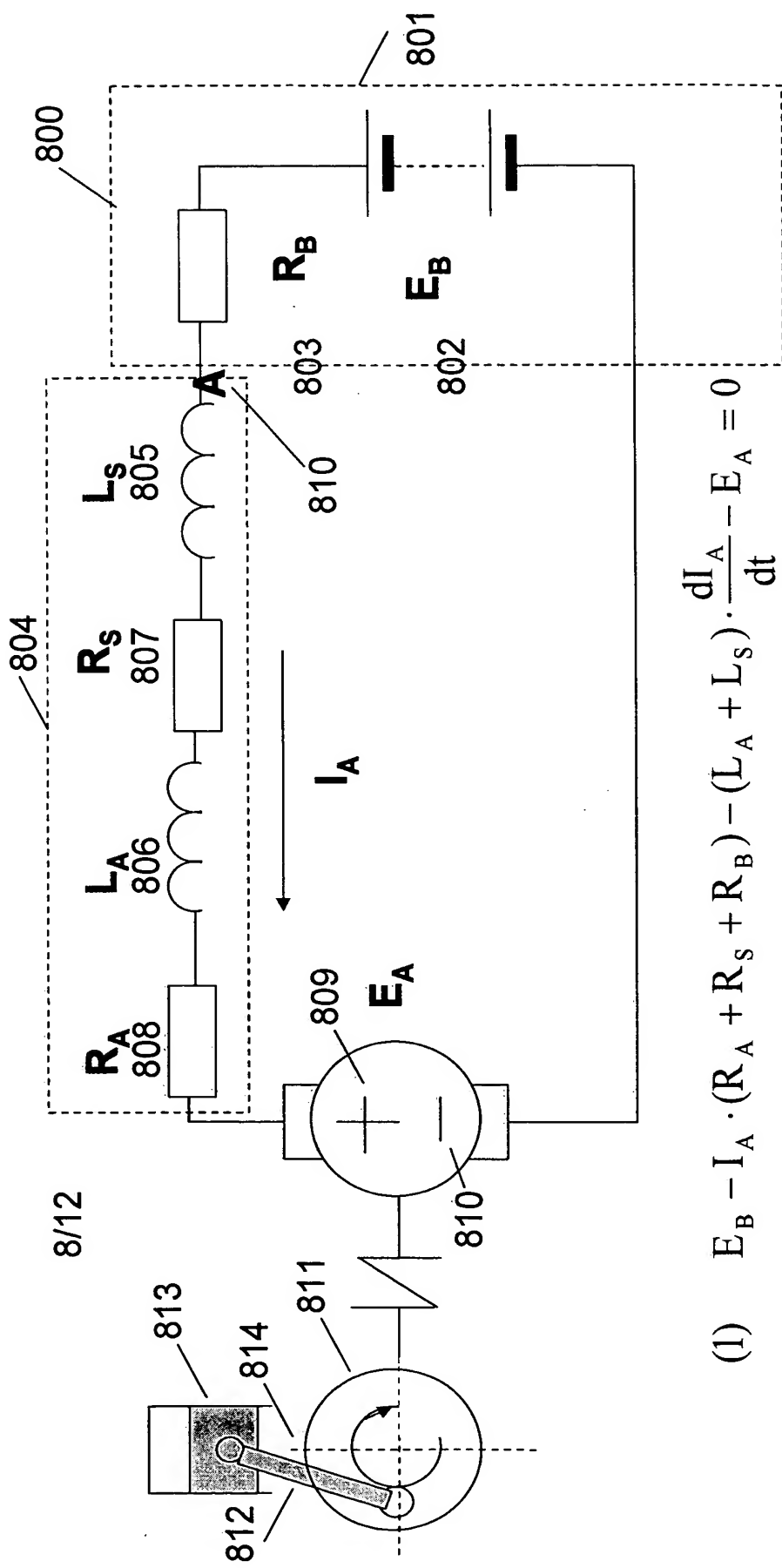


Fig. 7



$$(1) \quad E_B - I_A \cdot (R_A + R_S + R_B) - (L_A + L_S) \cdot \frac{dI_A}{dt} - E_A = 0$$

$$(2) \quad E_A = f(I_A) \cdot \frac{\omega_M}{\omega_{nom}}$$

$$(3) \quad \tau_M = I_A \cdot \frac{f(I_A)}{\omega_{nom}} - \tau_{friction}$$

$$(4) \quad J_T \cdot \frac{d\omega_M}{dt} = \tau_M - \tau_R$$

$$(5) \quad \tau_R = f(\alpha_M, V_E, n_C, \theta)$$

**Fig.8**



Fig. 9A

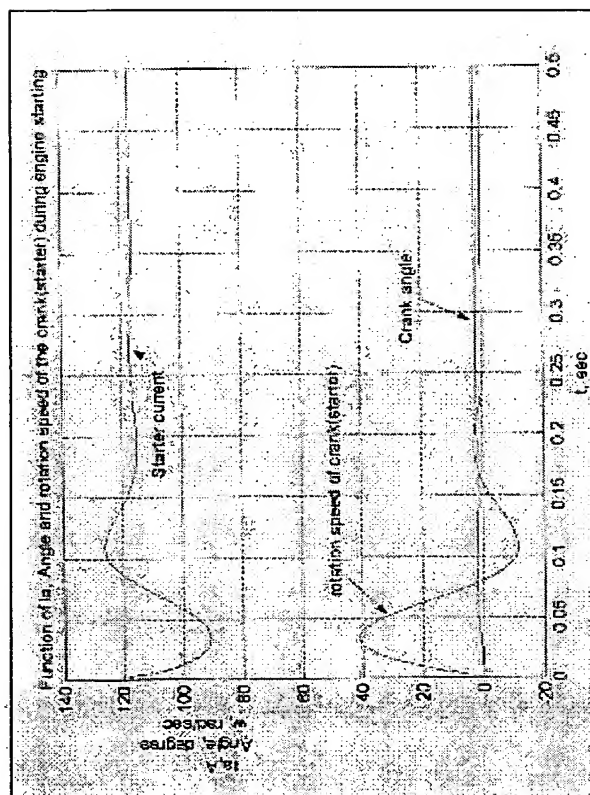
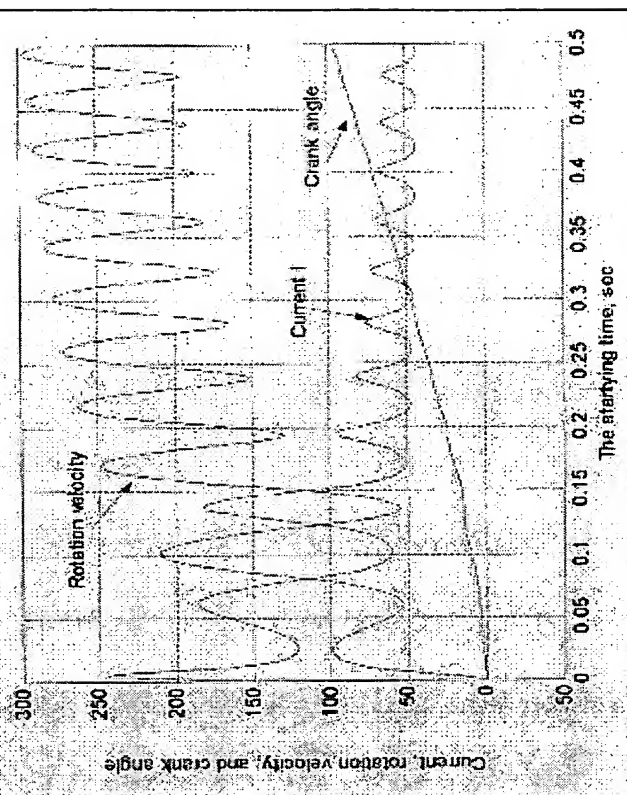
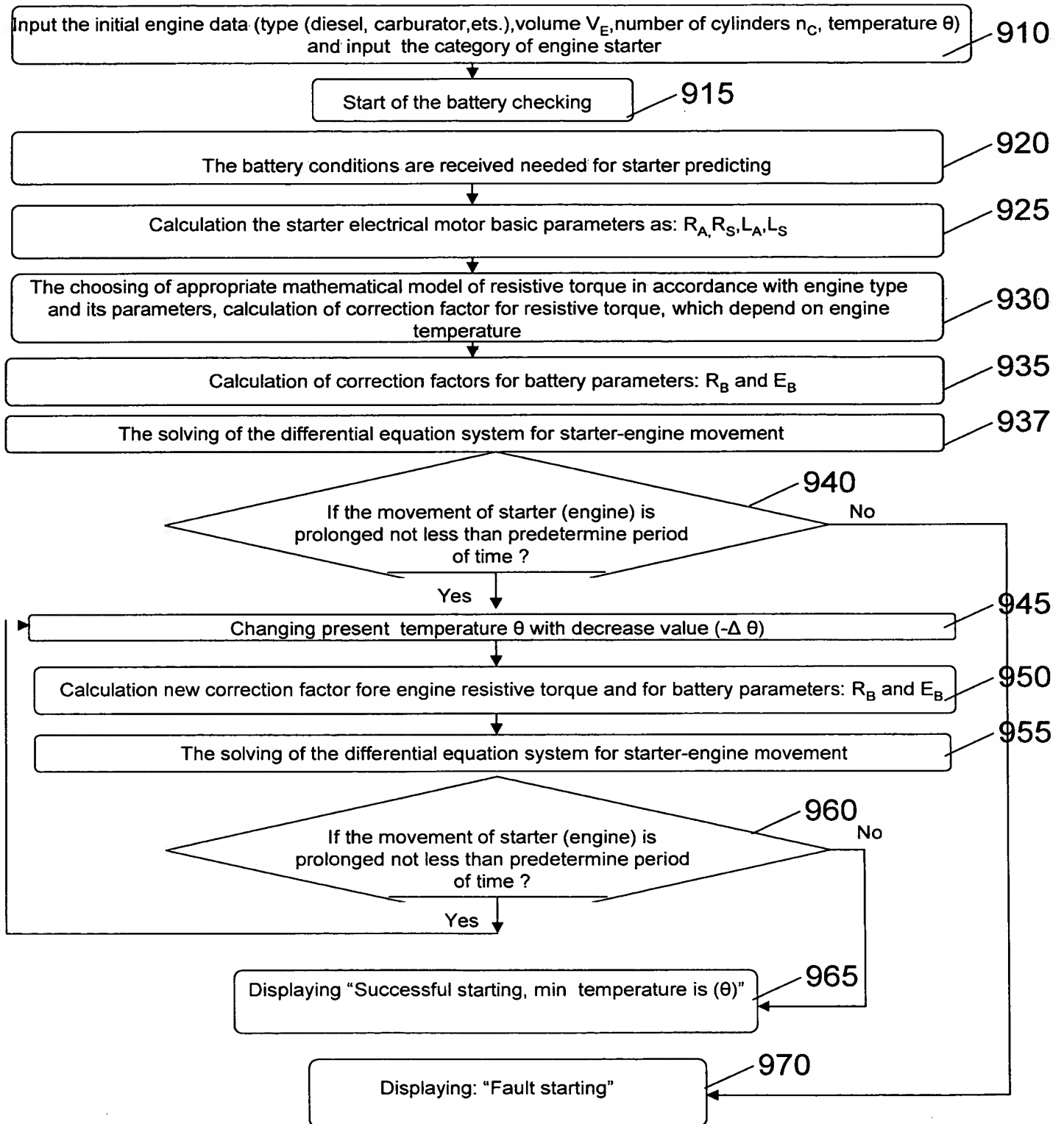
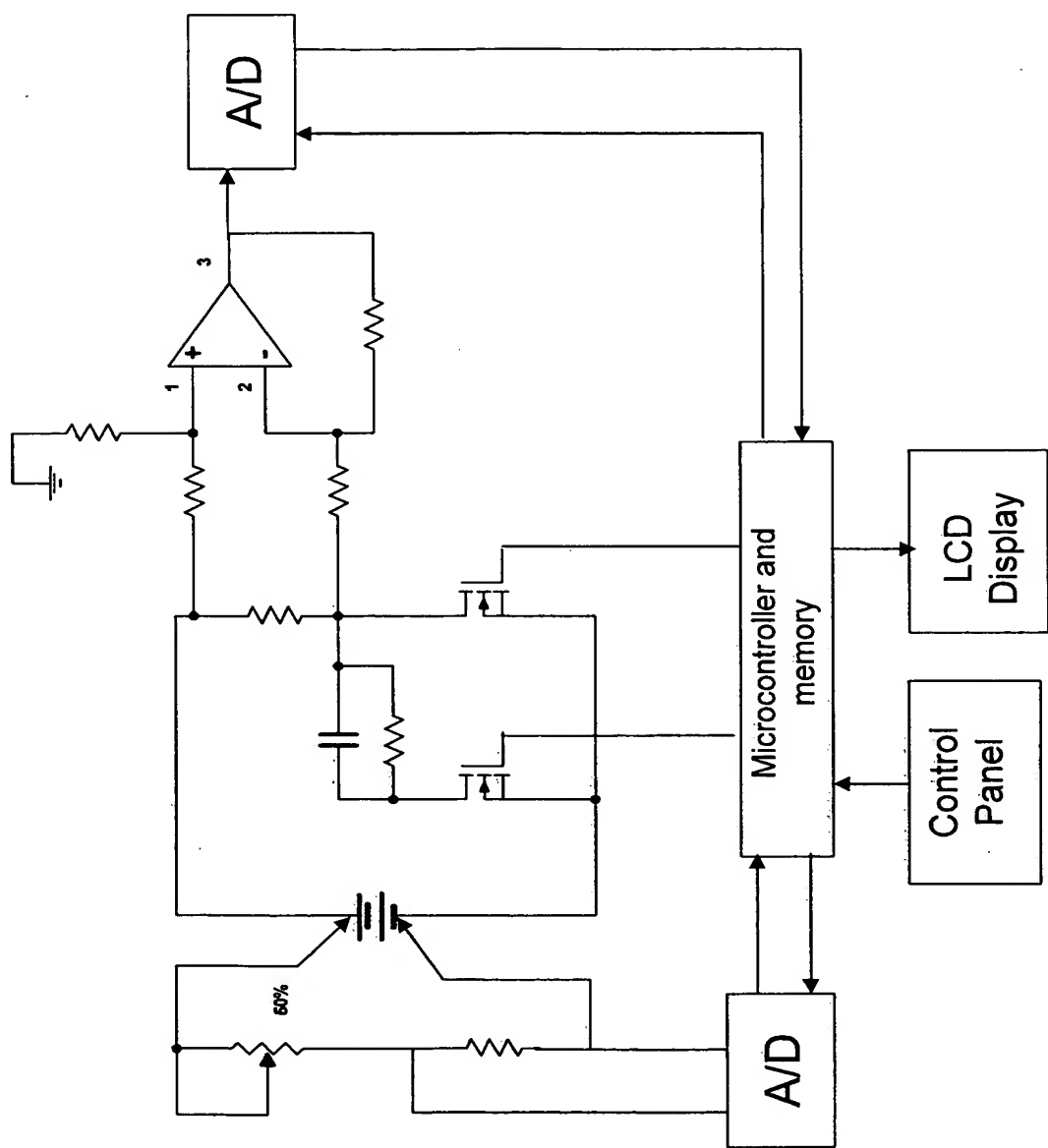


Fig. 9B

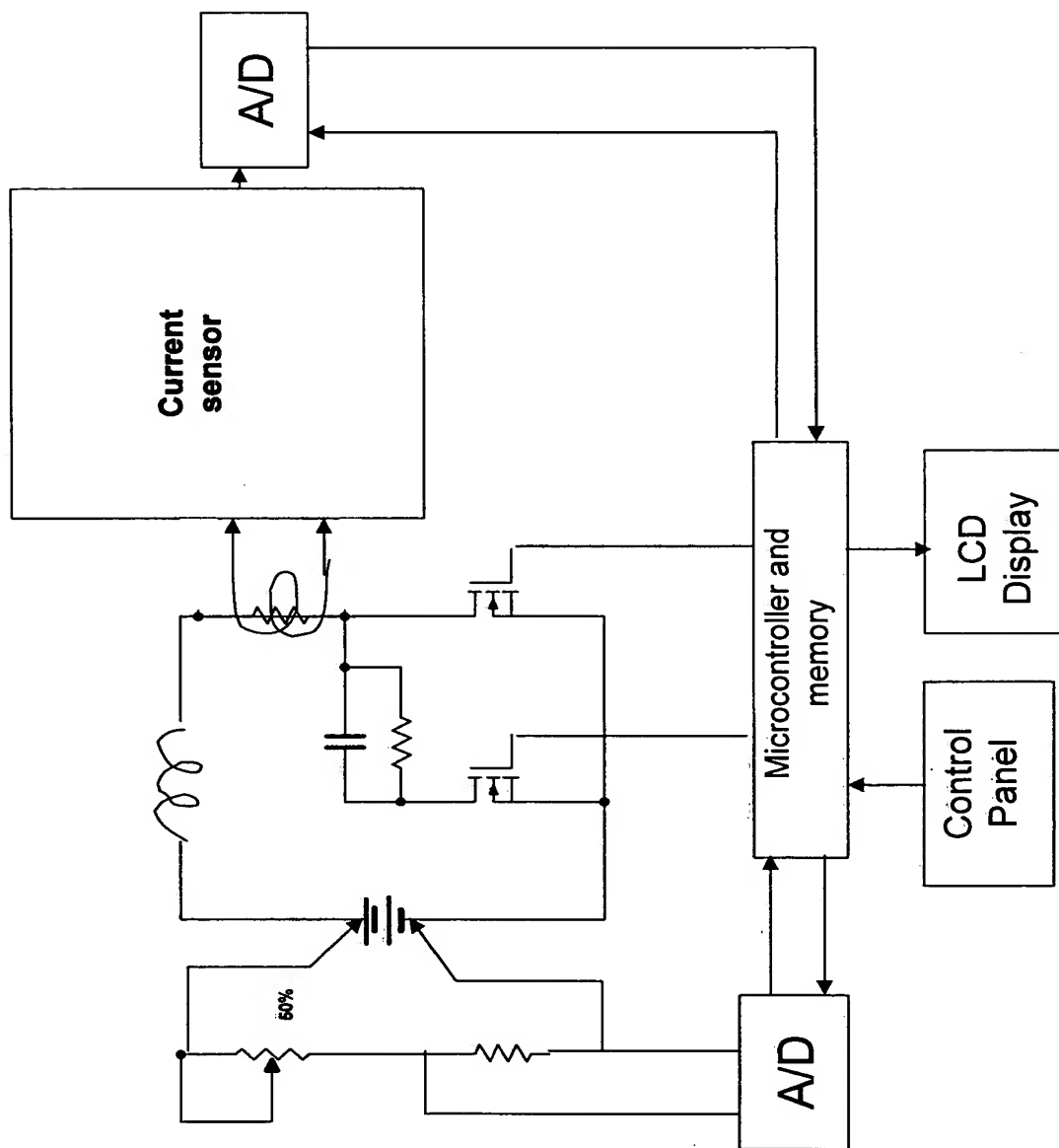




**Fig.10**



**Fig. 11**



**Fig.12**